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10/528,598	10/28/2005	Sylvain Dumet	PF020122	8266
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Robert D. Shedd, Patent Operations			LEE, ANDREW CHUNG CHEUNG	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,598	DUMET ET AL.	
	Examiner	Art Unit	
	Andrew C. Lee	2476	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 February 2010.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. Claims 1 – 10 are pending.

Claim Objections

2. Claim 6 is objected to because of the following informalities:

Regarding claim 6, the amended claim subject matter “internal bridge function” should be corrected as “internal said bridge function”. “said bridge function” refers back to the claim subject matter in item (b) of the claim, and is not a new “internal bridge” . Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the claim subject matter “routing device comprising: as **separate components**: a switch, a bridge function, and a multicast group management modules,” is not disclosed and described explicitly in the specification during the application was initially filed. Only as indicated in the drawing of Fig. 1, only the blocks of the Ethernet switch2 and integrated chipset 3 with built-in bridge 4 are shown. The switch2 and chipset3 are coupling with each

other with buses. As indicated in the drawing of Fig. 3, the decision of multicast group management information is determined in the switch before the information is passed on to the bridge function. The multicast group management function is implemented within the switch. Hence, it is unclear as to how “**as separate components**: a switch, a bridge function, and a multicast group management modules” as disclosed in the amended claim. Therefore, claim 1 contains subject matter which is not described explicitly in the specification and/or in the drawing in such a way to convey reasonably to one skilled in the relevant art that the inventor (s), at the time the application was originally filed, had the possession of the claimed invention.

Regarding claim 6, claim 6 has very similar discrepancies as shown in claim 1, the claim subject matter “said switch, internal bridge function, and said multicast group management module are **separate elements** in said routing device.” is not disclosed and described explicitly in the specification during the application was initially filed. Only as indicated in the drawing of Fig. 1, only the blocks of the Ethernet switch2 and integrated chipset 3 with bridge 4 are shown. The switch2 and chipset3 are connecting to each by buses. As indicated in the drawing of Fig. 3, the decision of multicast group management information is determined in the switch before the information is passed on to the bridge function. Hence, it is unclear as to how “said switch, internal bridge function, and said multicast group management module are **separate elements** in said routing device.” as disclosed in the claim. Therefore, claim 6 contains subject matter which is not described explicitly in the specification and/or in the drawing in such a way to convey

reasonably to one skilled in the relevant art that the inventor (s), at the time the application was originally filed, had the possession of the claimed invention.

Clarification and appropriate correction are required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 – 10 are rejected under 35 U.S.C. 102(e) as being anticipated by

Mahajan et al. (US 6785274 B2).

Regarding claim 1, Mahajan et al. disclose method for routing data packets in a routing device (*element 300, network switch, Fig. 2*) connecting a first network (*subnetworks, local area networks 210, 220, Fig. 2*) and a second network (*router segment 232*), said routing device comprising as separate components: a switch (“*packet parsing engine, element 402, Fig. 4, col. 9, lines 26 – 31, Fig. 2, col. 8, lines 41 – 57*”), a bridge function (*element 408, Bridge Forwarding Engine, Fig. 4*), and a multicast group management module (*element 410, multicast packet determination engine, Fig. 4*) said method comprising the steps of, at said switch:
(a) receiving a frame (“*message packets Ethernet frames*”, *Fig. 5*) from a device connected to the first network (“*Ethernet frame*”; *col. 8, lines 61 – 66, col. 9, lines 19 – 24*); (b) forwarding the frame to said bridge function of the routing device (*Fig.*

4, element 408, *Bridge Forwarding Engine*, col. 3, lines 30 – 34); wherein the bridge function is preformed by a means for forwarding a frame based on a destination address of the frame (“*forwards the packet through the switch using conventional bridge forwarding techniques based upon the MAC destination address contained in the MAC header of the message packet*”; col. 3, lines 30 – 34, col. 5, lines 16 – 21, lines 50 – 67); (c) checking whether the frame contains a multicast group management message (“*determine from the IP protocol information 540 whether the message packet 500 is an IGMP message*”; col. 5, lines 5 – 15, col. 9, lines 65 – 67) and in the affirmative, creating a new frame comprising as destination address (col. 5, lines 33 – 42, col. 10, lines 41 – 53), the destination address of said multicast group management module of the routing device, and as payload at least the multicast management data of the received frame (col. 5, lines 16 – 21, lines 50 – 67, col. 6, lines 16 – 26, col. 9, lines 35 – 44, col. 10, lines 1 – 21); and (d) forwarding this new frame to the bridge function (col. 10, lines 41 – 52).

Regarding claim 2, Mahajan et al. disclose method according to claimed wherein the first network is an Ethernet network and wherein the steps (a) to (d) are carried out by an Ethernet switch module (“*Ethernet message packet transmitted or received by the switch*”; col. 8, lines 58 – 67).

Regarding claim 3, Mahajan et al. disclose method according to claimed further comprising the step of inserting into the new frame an identifier of a port on which the initial frame was received (“*associated with forwarding index values which identify the port or ports*”; col. 9, lines 35 – 53).

Regarding claims 4, 9, Mahajan et al. disclose method and routing device according to claimed wherein the multicast group management message is an Internet Group Management Protocol (IGMP) message (“*a specific protocol type of multicast messages (e. g., IGMP)*”; col. 5, lines 1 – 15).

Regarding claim 5, Mahajan et al. disclose method according to claimed further comprising the step, by the multicast group management module upon reception of the new frame, of updating its multicast group information (“*update the switch’s forwarding table*”; col. 6, lines 49 – 62).

Regarding claims 6, 10, Mahajan et al. disclose routing device (*element 300, network switch, Fig. 2*) for connecting a first and a second network (*subnetworks, local area networks 210, 220, Fig. 2, router segment 232 as routing device connecting a first network and a second network; Fig. 2, col. 8, lines 41 – 57*), said device comprising: (a) a switch for receiving frames from the first network (“*Ethernet frame*”; col. 8, lines 61 – 66, col. 9, lines 19 – 24); (b) a bridge function (*Fig. 4, element 408, Bridge Forwarding Engine, col. 3, lines 30 – 34*); for delivering frames to appropriate modules as a function of respective frame destination addresses, said bridge function being connected to the switch (*Fig. 4, element 408, Bridge Forwarding Engine, col. 3, lines 30 – 34; “forwards the packet through the switch using conventional bridge forwarding techniques based upon the MAC destination address contained in the MAC header of the message packet”*; col. 5, lines 16 – 21, lines 50 – 67; col. 9, lines 35 – 53); (c) a multicast group management module for maintaining up to date multicast group information based on frames received on the first network, said multicast group management

module being connected to the bridge function for receiving selected frames there from (“*network management processor*”, “*update the switch’s forwarding table*”; *Fig. 3, col. 6, lines 1 – 12, lines 49 – 62*); wherein the switch is a means for determining whether a received frame comprises a multicast group management message (“*determine from the IP protocol information 540 whether the message packet 500 is an IGMP message*”; *col. 9, lines 65 – 67*), and in the affirmative, providing a new frame comprising multicast group management information extracted from the original received frame, wherein the new frame has a destination address equal to the address of multicast group management module (*col. 5, lines 16 – 21, lines 50 – 67, col. 6, lines 16 – 26, col. 9, lines 35 – 44, col. 10, lines 1 – 21, col. 11, lines 43 – 67*), and for forwarding the new frame to the bridge function (*col. 10, lines 41 – 52*); said switch (“*packet parsing engine, element 402, Fig. 4, col. 9, lines 26 – 31, Fig. 2, col. 8, lines 41 – 57*”), internal bridge function (*element 408, Bridge Forwarding Engine, Fig. 4*), and said multicast group management module (*element 410, multicast packet determination engine, Fig. 4*) are separate elements in said routing device (*Fig. 4, elements 402, 408, 410 coupling via buses*).

Regarding claim 7, Mahajan et al. disclose routing device according to claimed wherein the switch is an Ethernet switch (“*packets sent or received from the switch are Ethernet frames*”, “*Ethernet message packet transmitted or received by the switch*”; *col. 8, lines 58 – 67*).

Regarding claim 8, Mahajan et al. disclose routing device according to claimed wherein the switch comprises a plurality of ports for receiving frames (“*the*

*switch is 3-port bridge comprising Port A, port B, and Port R"; col. 8, lines 45 – 57), and wherein the switch further comprises means for including into the new frame a port identifier of the port (*forwarding index values which identify the port or ports*) on which the initial frame containing the multicast group management message arrived ("associated with *forwarding index values which identify the port or ports*"; col. 9, lines 39 – 55).*

Response to Arguments

6. Applicant's arguments filed on 2/18/2010 with respect to claims 1 – 10 have been fully considered but they are not persuasive.

7. Regarding claims 1 – 6, applicants argue that "The amendments have been made to clarify the claimed subject matter. Support for the amendments made to Claims 1 and 6, specifically, are found in FIG. 1 and the related text in the specification."

In response to the applicants' argument, Examiner respectfully disagrees.

The amended claim subject matters "**as separate components**: a switch, a bridge function, and a multicast group management modules," as disclosed in claim 1 is **not disclosed and described explicitly** in the specification, and "said switch, internal bridge function, and said multicast group management module are **separate elements** in said routing device." as disclosed in claim 6 is **also not disclosed and described explicitly** in the specification. Referring to Fig. 1 and Fig. 3, one of ordinary skilled in the art can understand that the switch entity coupling with the chipset with built-in bridge function via the buses, both the switch and chipset are mounted on a motherboard or an expansion card enclosed inside the routing device as indicated in Fig. 1. However, there is no obvious indicative block of the multicast group management modules shown in the Figure 1.

Referring to Figure 3, the IGMP function is only addressed in the switch feature

area, hence it is clearly shown that the multicast group management module/function is implemented in the switch for classifying and filtering the Ethernet packets (see applicants specification, page 4, lines 6 -21) and before the packets were passing on to the bridge function for further processing. There is not clear indication and explicit implementation of the physical layout for claim subject matter entities **as separate components** as claimed by the applicants. Hence clarification and appropriate correction are required.

8. Regarding claims 1 – 6, applicants further argue that "With the current amendment to Claims 1 and 6, it is unclear what the multicast group management module is in Mahajan. Applicants assume that the equivalent structure to be the Resolution Engine RE (412) to which the engine (410) forwards the signals as indicated in col 10 lines 18-40. It also indicates that the step of c3hecking is performed at the CFE (314). That is, all of these components are within the switch.

According to the Examiner, the switch is going to be the routing device. If we consider that the switch device as the routing device in Mahajan, then Mahajan discloses that the bridge function and the multicast group management module are in the switch. This compares to the elements of Claim 1 and 6 where such components are separate.

In other words, Mahajan discloses a method for routing data packets in a routing device (300) connecting a first network (210) and a second network (220), the routing device [being] comprising a switch, ~~a bridge function and a multicast group management module~~, (the strikeouts being the structure in Claim 1 which is not found in Mahajan as separate elements).

Mahajan et al discloses a method comprising the steps, at the switch, of:

(a) receiving a frame from a device connected to the first network; (col. 5 lines 5-15)

~~(b) forwarding the frame to the bridge function; wherein the bridge function is performed by a means for forwarding a frame based on a destination address of the frame;~~ (As the bridge function is included in the switch, the switch doesn't forward the frame to the bridge function.)

(c) checking whether the frame contains a multicast group management message and in the affirmative, creating a new frame (col. 10 lines 18-40) comprising ~~as destination address the destination address of the multicast group management modulo and as payload at least the multicast management data of the received frame; and~~

~~(d) forwarding this new frame to the bridge function.~~ (as the multicast group management module is included in the switch, the switch doesn't forward the new frame to that module)

To reiterate the point from d above, there would be no forwarding function performed, nor would the destination address of the multicast group module be

used in Mahajan because the switch, bridge function, and multicast group management module are all within the same switch. Hence, none of the functions would take place nor would they be needed in the switch of Mahajan.”

Applicants are reminded that, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to the applicants' argument, Examiner respectfully disagrees.

Examiner contends that the reference Mahajan et al, disclose all the claim subject matters as claimed in claim 1.

Examiner interpreted routing device as network switch, element 300, Fig. 2, and as separate components as Fig. 4, elements 402, 408, 410 coupling via buses: further interpreted a switch as “*packet parsing engine, element 402, Fig. 4, col. 9, lines 26 – 31, Fig. 2, col. 8, lines 41 – 57*, a bridge function as *element 408, Bridge Forwarding Engine, Fig. 4*, and a multicast group management module as *element 410, multicast packet determination engine, Fig. 4*. The cited reference network switch functions receiving packets from the network then classifying and filtering for IGMP packets and transmitting to other network(s) based on the destination addresses of the packet.

Examiner further interpreted “forwarding the frame to said bridge function of the routing device” as Fig. 4, element 408, Bridge Forwarding Engine, see col. 3, lines 30 – 34; then interpreted “wherein the bridge function is preformed by a means for forwarding a frame based on a destination address of the frame” as “forwards the packet through the switch using conventional bridge forwarding techniques based upon the MAC destination address contained in the MAC header

of the message packet"; col. 3, lines 30 – 34, col. 5, lines 16 – 21, lines 50 – 67); and interpreted comprising as destination address as MAC group destination address, col. 5, lines 33 – 42, col. 10, lines 41 – 53, "the destination address of said multicast group management module of the routing device, and as payload at least the multicast management data of the received frame" as see col. 5, lines 16 – 21, lines 50 – 67, col. 6, lines 16 – 26, col. 9, lines 35 – 44, col. 10, lines 1 – 21; and further interpreted "forwarding this new frame to the bridge function" as the packet is and IGMP message see col. 10, lines 41 – 52. Hence the cited reference discloses all the claim subject matters as separate components for carrying out the functionalities of classifying, filtering and routing/forwarding the packets for multicasting.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Ooghe et al. (US 20030123453 A1).
- b) Kobayashi (US 6457059 B1).
- c) Merchant (US 6778547 B1).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

Art Unit: 2476

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2476 <3Q10::4_28_10>

/Salman Ahmed/

Primary Examiner, Art Unit 2476